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Phase I Environmental Site Assessment

White Hills Site, Mohave County

Rhodes Homes, Inc.
Kingman, Arizona

Final
February 2005



Stanley Consultants INC.

A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

CL01026

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CL01029

Executive Summary

A Phase 1 Environmental Assessment of a site located in the White Hills area along White Hills Road (Mohave Co. Hwy. 145) east of US Highway 93 approximately 40 miles northwest of the City of Kingman, in Mohave County, Arizona, was performed by Stanley Consultants, Inc. The site is generally located in Sections 15, 16, 19, 20, 21, 23, 27, and 30, of Township 27 North, Range 20 West in Mohave County Arizona. Total area of the site is approximately 4,300 acres, including all of Sections 15, 19, 20 and 23, and portions of the other sections.

The assessment was completed in general accordance with the procedures outlined in ASTM E1527-00, Standard Practice of Environmental Site Assessments: Phase I Environmental Site Assessment Process.

The site is located in an area known as the Detrital Valley near the location of the historic town of White Hills. The site is currently all open space, consisting primarily of high desert terrain and associated vegetation. Mohave County Highway 145, also called White Hills Road, serves the site area from US Highway 93. White Hills Road is paved. A network of sand and gravel roads provide access to the site area from White Hills Road, although much of the site is inaccessible without the use of a four-wheel drive vehicle, and some portions of the site are only accessible on foot.

The properties around the site include scattered residential properties and open space. Mining activities and residential areas were observed in the hills to the east of the site. The mining activities in the White Hills location date to the late 1800's (reportedly 1892 to 1898). The area had mining, residential, and commercial activities at that time. Two cemeteries were reported in the area. Some of the drainage from the mining areas passes through the site as it flows toward the Detrital Wash.

Review of historical information indicates that past site uses were most likely similar or identical to current site uses. No evidence of previous industrial activities has been found on the site,

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although such activities did occur to the east of the site. Some very minor waste disposal consisting of random dumping has occurred on the site.

One potential hazardous material incident may have been indicated in the AZDEQ historic information for the site, however this incident is not considered significant.

The following environmental conditions or concerns were identified during the assessment:

1. It is unknown if sediments carried by surface runoff from the mining areas east of the site contain heavy metals at levels that would be of concern.

The following actions are recommended:

1. Evaluation of sediments in some of the surface drainage ways is recommended to evaluate effects mining activities have had on the site.
2. Removal and proper disposal of the litter present on the site.

Detailed information regarding these and other observations, and Site history is provided in the report.

CL01031

Section 1

Introduction

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) is to identify recognized environmental conditions. The term recognized environmental condition is defined as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

1.2 Involved Parties

Stanley Consultants, Inc., performed this assessment at the request of Rhodes Homes, Inc. for the benefit of Rhodes Homes, Inc. The assessment includes approximately 4,300 acres of property located in the White Hills area along White Hills Road (Mohave Co. Hwy. 145) east of US Highway 93 approximately 40 miles northwest of the City of Kingman, in Mohave County, Arizona.

1.3 Scope of Work

The ESA was conducted in general accordance with ASTM E1527-00 Standard Practice of Environmental Site Assessments: Phase I Environmental Site Assessment Process. According to ASTM E1527-00, Phase I Environmental Site Assessment shall have four components, described as follows:

1. *Records Review* - The purpose of the records review is to obtain and review available records that will help identify recognized environmental conditions in connection with the property.
2. *Site Reconnaissance* - The purpose of the site reconnaissance is to visually and physically observe the property (including buildings) and, to the practical extent, the adjoining properties for uses and evidence of previous uses that are indicative of recognized environmental conditions.
3. *Interviews* - Interviews of the current owners and occupants of the property and interviews of local agency officials to the extent they are reasonably available are performed to help identify recognized environmental conditions in connection with the property.
4. *Report* - The purpose of the report is to document the activities performed during the assessment, provide information supporting the analysis opinions and conclusions found in the report and summarize the findings of the assessment.

The following activities, among others, are excluded from the scope of work for a Phase I ESA as described in ASTM E1527-00:

- Testing sampling of materials (e.g. soil water, air, or building materials).
- Evaluations for asbestos, Radon, lead-based paint, lead in drinking water, and wetlands.

1.4 Limitations, Deviations, Exceptions, and Significant Assumptions

The extensive nature and general inaccessibility of portions the site limited on site visual evaluation of the ground surface to those areas reasonably accessible by four-wheel drive vehicle, and by foot travel from established paths. In the case of this site these are not considered significant limitations.

Due to the nature of the site no interviews of the current site owners, or government officials were conducted. Otherwise, no significant deviations or exceptions to the ASTM Standard Practice were taken.

No significant assumptions were made.

1.5 Special Terms and Conditions

None.

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**Section 2 Site
Description**

CL01035

Section 2

Site Description

2.1 Overview

The site is currently all open space, consisting primarily of high desert terrain and associated vegetation. The site area is served from US Highway 93 by Mohave County Highway 145, also called White Hills Road. White Hills Road is paved. A network of sand and gravel roads provide access to the site area from White Hills Road, although much of the site is inaccessible without the use of a four-wheel drive vehicle, and some portions of the site are only accessible on foot.

The location of the site is shown on Figure 2-1.

2.1.1 Location

The site is generally located in Sections 15, 16, 19, 20, 21, 23, 27, and 30, of Township 27 North, Range 20 West in Mohave County Arizona. Total area of the site is approximately 4,300 acres, including all of Sections 15, 19, 20 and 23, and portions of the other sections.

The site is located in an area known as the Detrital Valley, approximately 40 miles northwest of Kingman near the location of the historic town of White Hills.

The site boundaries are shown on Figure 2-2.

2.1.2 Description

The site is currently all open space, consisting primarily of high desert terrain and associated vegetation. The site area is served from US Highway 93 by Mohave County Highway 145, also called White Hills Road. White Hills Road is paved. A network of sand and gravel roads provide access to the site area from White Hills Road, although much of the site is inaccessible without the use of a four-wheel drive vehicle, and some portions of the site are only accessible on foot.

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Drainage in the site area is toward the west and north toward the Detrital Wash, which flows northward toward Lake Mead. The wash is typically dry, but can carry significant flow during rainfall events. The area is reportedly prone to flash floods.

No utility systems, other than telephone and overhead power, were observed on the site.

Photographs of the site and surrounding areas, taken by Scott Byram of Stanley Consultants on January 12, 2005, are included in Appendix B.

2.1.3 Adjacent Properties

The properties around the site include scattered residential properties and open space. Mining activities including an above ground tank, and residential areas were observed in the hills to the east of the site. The mining activities in the White Hills location date to the late 1800's (reportedly 1892 to 1898). The area had mining, residential, and commercial activities at that time. Two cemeteries were reported in the area.

2.2 Environmental Setting

2.2.1 Topography

Local topography varies from a high of approximately 3,600 ft. MSL in Section 23 at the easternmost edge of the site to a low of approximately 2,400 ft. MSL in Section 19 along the Detrital Wash at the westernmost edge of the site.

Drainage on the site is generally to the west and north via numerous tributaries of the Detrital Wash, and then north via the Detrital Wash toward Lake Mead.

2.2.2 Geology and Soils

In general the soils in the site area consist of stratified alluvial valley fill between the local mountain ranges. USDA Soil Conservation Service mapping for the area was not available for our review. However based on observations in the field, the soil in the site area is most likely a fine sandy loam, with some occurrences of coarser sands and gravels in some areas, particularly near drainage features. These soils are typically well drained, coarse grained soils with a slow infiltration rate, moderate water holding capacity, and a typical depth to the water table of greater than six feet. These soils typically do not meet the requirements for hydric soil. Deeper soils are typically silty clay loams, and gravelly sandy loams. Caliche may also be present in some areas.

According to the information provided by Arizona Department of Water Resources (ADWR), depth to bedrock in the site area is greater than 800 feet (based on nearby well logs) and may be as much as 6,000 feet at the lowest point in the basin.

2.2.3 Hydrogeology

According to the ADWR, basin and range aquifers are generally the principal sources of groundwater in the site area. These aquifers are present in alluvium-filled basins interspersed between ranges of mountains in the northwest portion of Arizona. The site is located within the Detrital Valley basin. The following information was provided by the ADWR.

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The Detrital Valley basin encompasses approximately 875 square miles. The basin is bounded by the White Hills and Cerbat Mountains to the east, the Black Mountains to the west, and a low topographic rise to the south that separates it from the adjacent Sacramento Valley basin. The valley floor slopes northward from 3,400 feet to 1,200 feet above mean sea level where Detrital Wash drains into Lake Mead. Maximum altitude in the basin is 7,148 above mean sea level in the Cerbat Mountains.

Groundwater occurs mostly in the basin-fill material and at shallow depths in the alluvial deposits along the mountain washes. Groundwater flows in a northerly direction with depth to groundwater ranging from 20 feet at Lake Mead to over 780 feet below land surface at the south end of the basin. Depth to bedrock exceeds 6,000 feet below land surface at its deepest point. Well yields of up to several hundred gallons per minute have been reported in the basin-fill.

There is an estimated 1.0 million acre-feet of groundwater in storage in Detrital Valley basin with less than 1,000 acre-feet recharged annually. Most of the 190 acre-feet pumped in 1985 were used for domestic purposes. Historical groundwater data are limited, however, little change in water levels suggests the basin is in a steady-state condition. Most of the groundwater is of suitable quality for domestic and other purposes with only isolated areas containing high dissolved solids and fluoride concentrations.

A search for available ADWR well records was conducted by Stanley Consultants. The search indicated two records of wells within the site area. These were located in the northeast quarter of Section 15, and the southeast quarter of Section 21. The file information for the Section 15 well indicated a well depth of approximately 800 feet. The files indicated a total of 26 well records within Township 27N, Range 20W.

A search of available US Geological Survey records for the site area was conducted by Stanley Consultants. This information indicated an additional four wells in the general site area (within approximately one mile of the site). The depths reported for these wells varied up to 500 feet, with depth to groundwater of approximately 400 feet. It is likely there are other smaller wells in the site area as well that do not appear in the records.

Two airfields and some residential areas observed approximately one mile to the northwest of the site. Two wells were observed in this area.

A copy of the ADWR information for the Section 15 well is provided in Appendix E.

2.3 Site History

Review of historical information indicates that past site uses were most likely similar or identical to current site uses. No evidence of previous industrial activities has been found on the site, although such activities did occur to the east of the site. Some very minor waste disposal consisting of random dumping has occurred on the site.

Mining activities including an above ground tank, and residential areas observed in the hills to the east of the site. The mining activities in the White Hills location date to the late 1800's (reportedly 1892 to 1898). The area had mining, residential, and commercial activities at that

time. Two cemeteries were reported in the area. Some of the drainage from the mining areas passes through the site as it flows toward the Detrital Wash.

Additional discussion of apparent site history and surrounding properties is included in the Section 3 summaries of the topographic mapping, aerial photograph, and other information for the property.

2.4 Interviews

No interviews were conducted on site.

No interviews of current owners or local government officials were conducted.

2.5 Site Observations

Scott Byram of Stanley Consultants visited the White Hills site on January 12, 2005. Weather during the visit was clear, with temperatures in the 40's and 50's. Some standing water, a result of recent rainfall, was noted in the area.

The site is generally located in Sections 15, 16, 19, 20, 21, 23, 27, and 30, of Township 27 North, Range 20 West in Mohave County, Arizona. The total area of the site is approximately 4,300 acres, including all of Sections 15, 19, 20 and 23, and portions of the others. The site is located in an area known as the Detrital Valley.

The site is currently all open space, consisting primarily high desert terrain and associated vegetation. A number of Joshua trees were observed on and around the site. The site area is served from US Highway 93 by Mohave County Highway 145, also called White Hills Road. White Hills Road is paved. A network of sand and gravel roads provide access to the site area from White Hills Road, although much of the site is inaccessible without the use of a four wheel drive vehicle, and some portions of the site are only accessible on foot.

Drainage in the site area is toward the west and north toward the Detrital Wash, which flows northward toward Lake Mead. The wash is typically dry, but can carry significant flow during rainfall events. The area is reportedly prone to flash floods.

No significant waste disposal was observed on or around the site. A very minor amount of trash disposal (litter) was noted in several areas on the site.

A communications tower and associated support facility was observed in the southeast quarter of Section 19. Overhead power lines, with pole mounted transformers were noted along the east lines of Sections 19 and 30, along White Hills Road, and several other locations throughout the site area.

Residential areas observed near the site included a portion of Section 29, served from Rocky Point Road, which is located in the southwest $\frac{1}{4}$ of Section 20, a residence in the southwest $\frac{1}{4}$ of Section 21, and Golden Horseshoe Unit 1, a residential area located in the southeast $\frac{1}{4}$ of Section 9 served by Hitching Post Drive through the site.

No significant development was observed on the site.

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Mining activities including an above ground tank, and residential areas were observed in the hills to the east of the site. The mining activities in the White Hills location date to the late 1800's (reportedly 1892 to 1898). The area had mining, residential, and commercial activities at that time. Two cemeteries were reported in the area.

Several commercial tourist related activities were observed along Highway 93 to the west of the site.

Two airfields and some residential areas were observed to the northwest of the site. Two wells were also observed in this area.

Open space and some residential activities were observed to the south of the site.

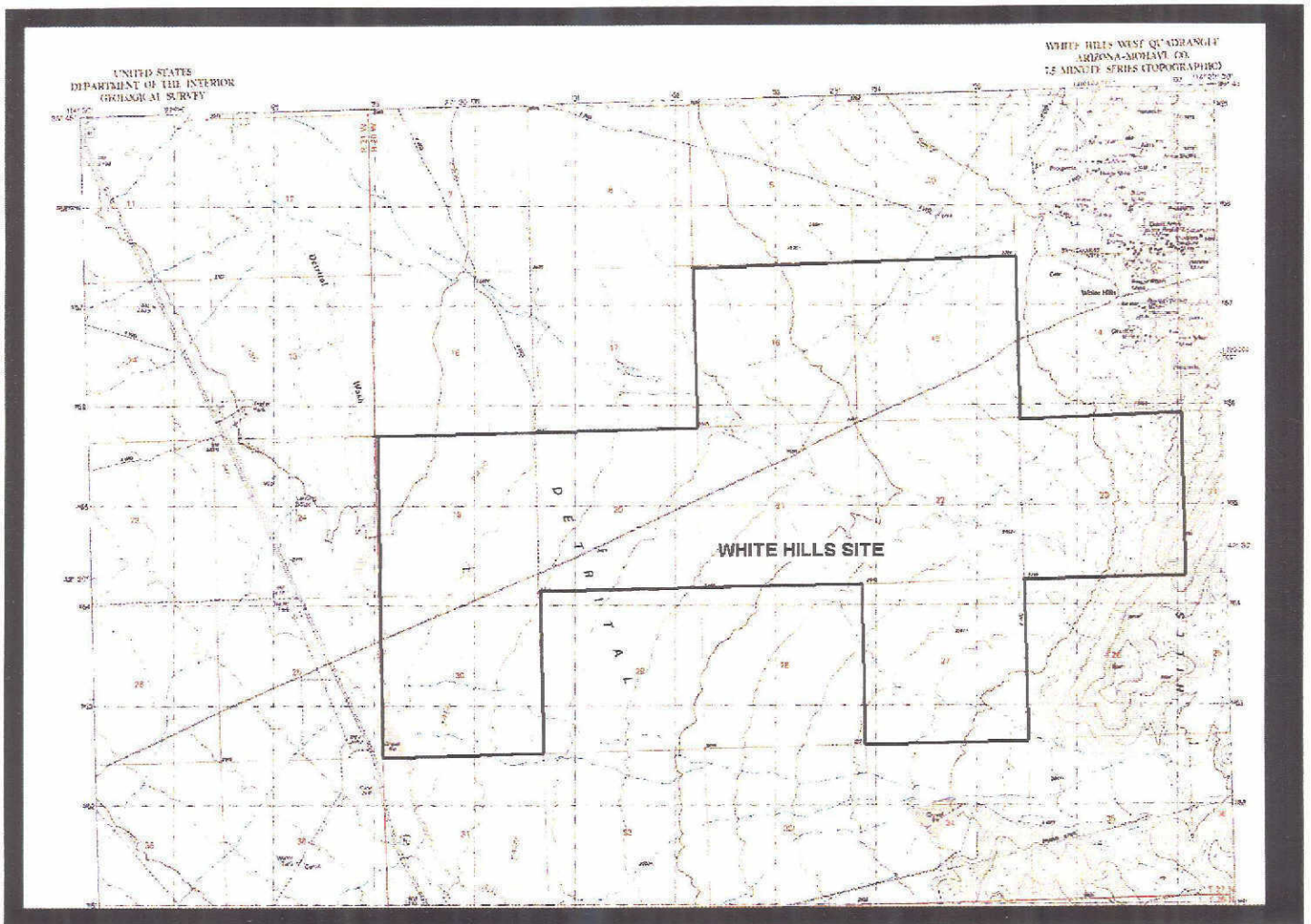
No utility systems, other than telephone and overhead power, were observed on the site.

Bulk hazardous materials were not observed on the site. Hazardous material containers were not observed on the site. Visual evidence of the presence of underground tanks was not noted on the site.

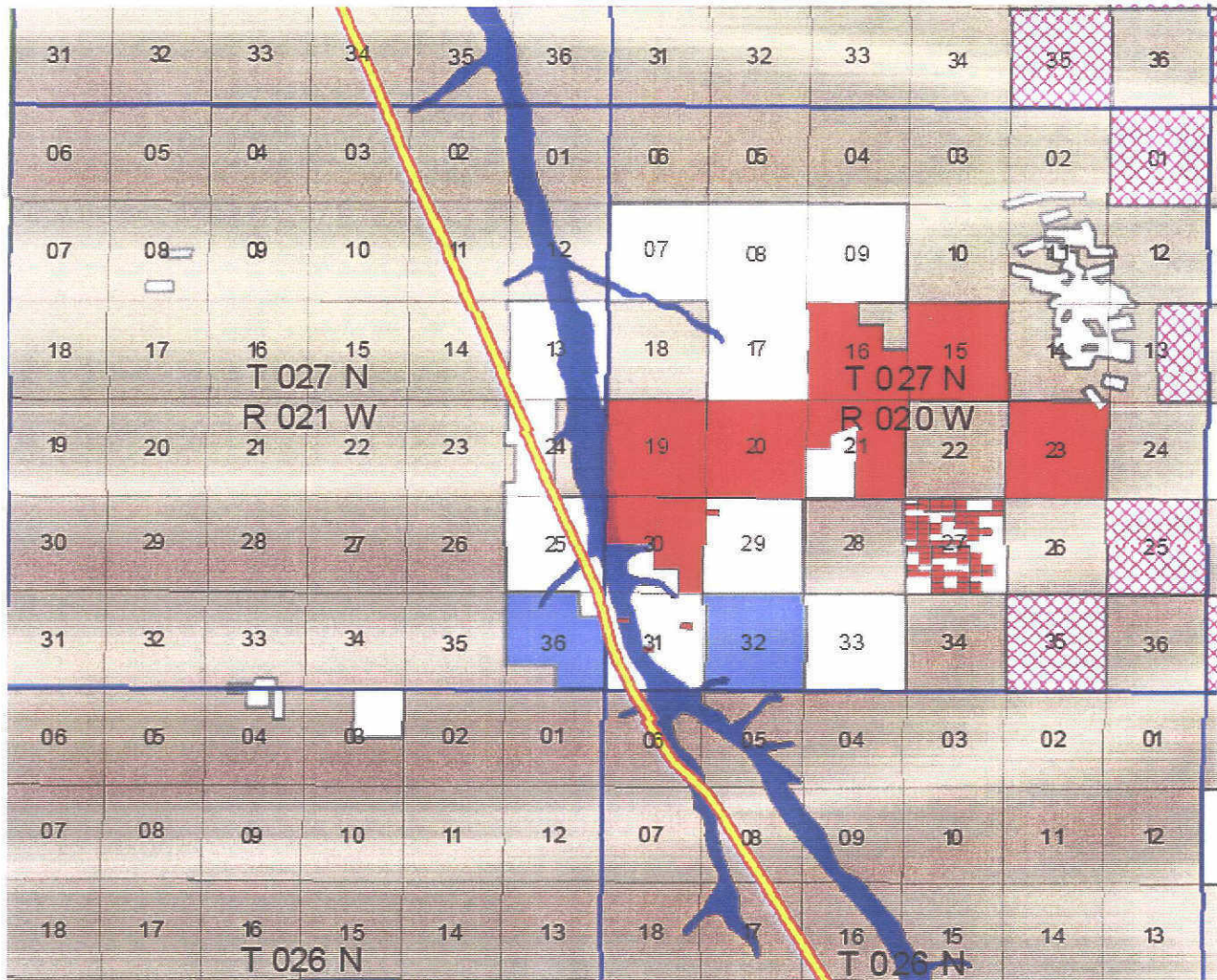
No above ground tanks were noted on site other than as described above. No solid waste disposal was noted on site, other than as described above. No hazardous substances, except as described above, were noted on site.

Photographs of the site taken by Scott Byram of Stanley Consultants on January 12, 2005, are included in Appendix B.

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Site Location
Figure 2-1



White Hills Parcels (shown in red)

Site Location and Surrounding Area
Figure 2-2

**Section 3 Records
Review**

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Section 3

Records Review

3.1 Search of Standard Environmental Record Sources – Federal and State

Available environmental regulatory agency databases were collected and reviewed (See Appendix A). The database search was made of the following Federal and State database records for sites within a one mile radius of the boundaries of the subject site.

Figure 3-1 shows the search area.

The typical ASTM search radius for these databases varies from the subject site itself, to within one mile of the subject site. Accordingly the area search accomplished the intent of the ASTM Standard.

3.1.1 Federal

- National Priorities List (NPL).
- Proposed National Priorities List (Proposed NPL).
- Delisted NPL (NPL Deletions).
- NPL Liens.
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS).
- Resource Conservation and Recovery Information System (RCRIS).
- Emergency Response Notification System (ERNS).
- No Further Remedial Action Planned Sites (NFRAP).
- RCRA Corrective Action Activity (CORRACTS).
- RCRA Administrative Action Tracking System (RAATS).

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- Waste Water Treatment Facilities (Aquifer)
- Drycleaner Facility Listing (DRYCLEANERS)
- Dry Well Registration (Dry Wells)
- Arizona Airs Database (AZAIRS)

3.1.3 Other National Databases

- Brownfields Sites (US BROWNFIELDS)
- Brownfields Tracking System (BROWNFIELDS)
- DEUR Database (AUL)
- Voluntary Remediation Program Sites (VCP)
- Former Manufactured Gas Sites (Coal Gas)

Detailed descriptions of each of these databases are included in the regulatory database information included in Appendix A.

3.2 Results of Search - Federal and State

In summary, the regulatory database search yielded the following information pertaining to the site and surrounding vicinity (based on ASTM E1527-00 search radii, as expanded for this evaluation) regarding involvement in Federal and State environmental programs:

The site as described in Section 2.1 of this report did not appear on any of the databases listed above.

Surrounding sites (as defined by the ASTM search radii) did not appear on any of the databases listed above.

Due to poor or inadequate address information in the regulatory files, a number of the sites listed in some of the databases for Mohave County were not mapped by the EDR search. The complete list of these sites is provided in the EDR Appendix A. After review of the list, none of the unmapped sites appear to be located on or within one mile of the site.

A search of the ADEQ hazardous materials incident files indicated one incident reported in the general site area. This was a 1990 report of a threat of a release of an unidentified quantity of an unspecified poisonous material along White Hills Road. No other information was provided in the file. As this was labeled a threat rather than a release it is not considered significant.

For additional information about the government databases see Appendix A.

3.3 Additional Information Sources

3.3.1 Topographic Mapping

Topographic maps of the site, adjacent properties, and surrounding area for 1989 at 1 to 24,000 scale, and for the year 1960 at 1 to 62,500 scale, prepared by the United States Geological Survey were reviewed. These maps were evaluated for evidence of past site use,

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and activities which might be of concern. Copies of appropriate portions of these maps are included in this report.

These maps all show the site and surrounding areas much as they appear today, except that not all of the roads/trails present today were present at those times. Also, some additional residential development has taken place in the general site area. Otherwise, there are no discernable significant differences from 1960 to the present.

3.3.2 NEPA Background Evaluation

The National Environmental Policy Act of 1969 (NEPA) requires that Federal agencies include in their decision-making processes appropriate and careful consideration of all environmental effects and actions, analyze potential environmental effects of proposed actions and their alternatives for public understanding and scrutiny, avoid or minimize adverse effects of proposed actions, and restore and enhance environmental quality as much as possible.

A search of readily available NEPA related information for the site area was performed for Stanley Consultants by EDR, Inc. The search radius was five miles from the center of the site. The EDR search provides information which may be used in conjunction with additional research, as appropriate, to determine whether a proposed site or action may have significant environmental effect.

The report included information for the items summarized below:

Natural Areas:

- Officially designated wilderness areas (US)
- Officially designated wildlife preserve (US)
- Officially designated wildlife preserve (AZ)
- Threatened or endangered species or critical habitat (County)

Historic Sites:

- Listed or eligible for National Register (US)
- Listed or eligible for National Register (AZ)

Floodplains

Wetlands

FCC & FAA Sites:

- Communications Towers
- Airports
- Power Lines

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The results of the evaluations identified a substantial amount of US Federal Land (all reportedly owned/controlled by BLM) within the five mile site search radius, including what appears to be Sections 16, 20, and 30 which are part of the site. No State designated lands were identified in the search. A number of threatened/endangered species were identified in Mohave County. These are discussed below.

No historic sites were identified within the search radius.

Several of the larger washes have been mapped as 100 year floodplain. These washes border the westerly edge of the site area.

No mapped wetlands were identified in the site area.

No concerns regarding FCC or sites were noted within the five mile site search radius. A communications tower was observed in the southeast quarter of Section 19. A small airport is present in Section 24 to the west of the site. Overhead power lines cross the site in several locations.

The following endangered species were listed for Mohave County. It is unknown if any are in the site area. A detailed on site biological evaluation would be necessary to make that determination.

Snails:

- Kanab Ambersnail

Reptiles:

- Desert Tortoise

Plants:

- Holmgren Milk-Vetch
- Arizona Cliffrose
- Jones Cycladenia
- Siler Pincushion Cactus

Mammals:

- Hualapai Mexican Vole

Fish:

- Razorback Sucker
- Virgin River Chub
- Humpback Chub
- Bonytail Chub

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Birds:

- Yuma Clapper Rail
- Mexican Spotted Owl
- Bald Eagle

Detailed search results are provided in the EDR report in Appendix A.

3.4 Site Ownership Information

A search for City Directory information for the area was performed for Stanley Consultants by EDR Inc. No listings were available.

3.5 Fire Insurance Maps

A search for reproductions of Sanborn Fire Insurance Maps for the site and nearby area was performed by EDR. No coverage was available.

3.6 Aerial Photographs

Aerial photographs of the site, adjacent properties, and surrounding area dated 1995 were obtained from the US Geological Survey for review. Results of the evaluation are summarized in the following.

The 1995 photo shows the site, and surrounding areas essentially as they exist today. Land use on the site and in the site area appears consistent with current conditions.

Copies of the photos are included in this report.

3.7 Previous Environmental Studies

No previous environmental studies specific to the site were available for our review.

3.8 User Provided Information

No significant user provided information was used in preparation of this evaluation.

3.9 Additional Historical Information

Information available from the Mohave County Museum of History and Arts for the site area was reviewed. This information is summarized below.

White Hills began inauspiciously when a Hualapai Indian cowboy who went by the name of Jeff, was off-handedly asked by Judge Henry Schaeffer "if he knew of any good mine prospect."

In 1894, a correspondent from the Arizona Republic, set many rumors aside when he interviewed Jeff, quoting the following:

"During the latter part of 1887, Hualapai Jeff was on his way toward the head of the canyon (now camp White Hills) in search of paint that he had been told existed in that neighborhood. He found both, the paint (oxide of iron) and a fine specimen of chloride of silver. He thought the

CL01048

specimen was worth keeping and later on, while in Mineral Park, he showed the sample to Louis Siebrecht who told him that it was iron ore with no value, so Jeff paid no more attention to his find.

"In the winter of 1891, a snow storm was raging and Frank Robinson asked Jeff to help in driving back some cattle, which had wandered from Gold Basin down the canyon toward the desert below White Hills (the mountain range). Jeff... camped for one night near the place where he was getting paint, which he had found in 1887. . .he accidentally found a rich silver float. He said nothing at the time, but in Gold Basin a short time afterward, Judge Henry Schaeffer asked Jeff if he knew of any good mine prospect. Jeff brought him a specimen and he offered Jeff \$200 if he would show him the location. . ."

"Jeff accepted the offer. . .Schaeffer invited John Barnett and John Sullivan to join him for the trip to the location. . . with Jeff as the guide. It was in May 1892 when the three men staked the following claims: Horn Silver, Occident, Grand Army (of the Republic), Chief of the Hills, Treasurer, Norma and Emma. . ." These three men formed a partnership, excluding Jeff. Judge Schaeffer had his two partners bond their interest to him for \$10,000 backed by a side arrangement whereby they should have an equitable "divvy". . .before he told them of the location. The Judge told everyone in July 1892 that no Indian was involved, that he found the original float years previous, and had spent that time since searching for it.

The scarcity of potable water and lack of tools slowed its growth only momentarily. The Judge and other miners gathered (200 by the third week!) to form the Indian Secret Mining District to have an authority available to keep track of claims. A few men gathered in Taggart's tent store, debated and chose White Hills as the name for the new camp, versus Indian Secret or Schaefferville. A latecomer M. L. Vail, went to Prescott for a photographer, and mentioned to the local newspaper it should have been named "Silverado." As more prospectors arrived upon hearing of the "strike," a few "mild knockdowns" and a lawsuit over claim jumping indicated a major problem. . .that of accurate claim notices. Judge Schaeffer was among those who "became slightly confused as to the points of the compass," and according to his words "avaricious people had the impudence to relocate some of the most valuable claims."

The boom was on. In the shape of an "L" about 1 mile in length, countless buildings were erected - homes, a school, stores, laundries and 12 saloons (7 in a row on Main Street). Town lots went for \$300. A post office came into being October 20, 1892, to be discontinued August 1914.

The rich shipments caught the attention of David Moffat, noted mining man of Denver, Colorado. He sent D. T. Root to investigate and in August 1893 Moffat and Root had consolidated most of the claims into one property under "White Hills Mining Company." They immediately shipped a ten stamp mill from Denver and had it running early in 1894. At this time 500 men were working on leases, while still more men worked for the company. The mill was successful for two years, when the Moffat-Root Company sold out in April 1896 to an English company, the "White Hills Mining & Milling Company," for \$1,750,000. The new company gave the more than 500 lessees on the small claims notice to quit, in effect banishing them from the camp. Disposing of the old mill as junk, they built a 40 stamp mill for \$150,000.

CL01049

A 7-mile, 8" pipe line was constructed to springs guaranteed by a "water witch," ignoring ample water in the mines for the old mill and promise of more in depth. A concrete reservoir of 1,000,000 gallons capacity was built, to hold the springs' water and White Hills was provided with an up-to-date water supply system, including fire hydrants - which did not work - the gravity was insufficient for operation. A \$150,000 electric plant was constructed. Twenty employee houses were erected and a complete telephone system was installed. All this cost \$350,000, even though considered wasteful management, the company was enabled to continue substantial production for 4 years because of the large quantity of good ore left by the first company and by the lessees.

For a good part of 2 years after the mill was completed, the south 20 stamps were run on the low grade ores and the high grade ore shipped as before. But management refused to follow their company engineer's advice to develop. The company paid promptly, until last payment came due, causing a dispute and a litigation, until 1904 when property sold under judgment to Moffat. In 1911, Moffat failed in business, at which time the property passed to Mr. Root's family and litigation again ensued. In 1922, another attempt was made to operate, but because of lack of experience and capital, the property became involved in another litigation which was finally settled in the early 1930's clearing the title for the first time in several years.

Despite \$12,000,000 in total ore production for the past six years, in 1898 new strikes stopped, rich vein paid out. Building ceased, the cost of living soared, so miners and families drifted away.

By 1899, those few hardy stragglers left were ultimately hit by something more devastating. . . a flood that inundated the town and its mineshafts. Its destiny was sealed. The telephone line was given over to Chloride. Owners closed everything by 1902. In 1903, a 40 stamp mill was installed for a short revival, and again in 1920, with the local paper quoting "20 children in the school" until about 1923. In 1972, a mining company commenced exploration, but found not enough to warrant expense of full development.

Today, 100 years after the flood, White Hills is considered a 'true' Ghost Town of Mohave County.

A preliminary report entitled Recovery of Perennial Vegetation in Military Target Sites in the Eastern Mojave Desert, Arizona, published by USGS was also reviewed. This document describes a series of aerial gunnery ranges established in the general site area during World War II. The nearest of these to the site appear to be approximately 25 miles to the southeast of the site in the Hualapai Valley. The report does not indicate the use of the site as a gunnery range.

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